

Grismald

Correspondence of the Peckham Society, an informal organization dedicated to research in the biology of jumping spiders.

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EDITORIAL COMMENTARY:

Letter from the Society Correspondent.

This is the first issue of a newsletter designed to keep salticid workers in touch with one another and to serve as an informal outlet for ideas, literature reviews and even some humor relating to spiders of the family Salticidae (and also the Lyssomanidae if it is considered to be a separate family). In recent years the study of salticids has become increasingly popular, as evidenced by the correspondence carried on by G. B. Edwards, David Hill and myself with workers in the United States, Canada, New Zealand, Poland and Argentina. With a total of at least four "salticidologists" at the University of Florida, we thought it might be a good idea to initiate some means of keeping in contact with other workers. This newsletter was the result of that idea. We have named it PECKHAMIA in honor of George and Elizabeth Peckham. We propose a loose, informal organization called the Peckham Society, to include anyone working on, or seriously interested in the systematics, morphology, physiology, ecology, behavior or evolution of jumping spiders.

We would like to have any comments as well as contributions of written material (including requests for specimens, literature, etc.), sent to your Society Correspondent:

David B. Richman
 Department of Zoology
 University of Florida
 Gainesville, Florida 32611

Letter from the Editorial Staff.

General purposes of PECKHAMIA. PECKHAMIA is intended as a tool to facilitate the rapid and accurate communication of both original ideas and the results of current research within a limited group of scientists and naturalists who are seriously interested in the study of jumping spiders (Araneae: Salticidae). This format is essentially a form of organized correspondence, bridging the gap between informal exchange of letters and publication in an established

journal. We are certain that a wide variety of information is applicable to this category, particularly informal reviews and opinions, research suggestions, reports of recent or continuing work, and personal requests for either advice or assistance. The limited circulation of PECKHAMIA allows us a great versatility in determining content. Members of the Peckham Society should feel free to submit any ideas with regard to modification of the format or content of PECKHAMIA to the Society Correspondent, David B. Richman.

Instructions for submission of material. We are extremely versatile in this regard, and virtually any form is acceptable, provided that it is pertinent to salticid biology, and written in coherent English. Of course we prefer double-spaced typewritten copy. All drawings and photographs should be numbered sequentially as they will appear in the text of articles as figures. Drawings should either consist of simple lines, or be amenable to xerocopy. Reduction at this end of the operation is not feasible. Photographs should be submitted either in the form of 25 preferably glossy prints of appropriate size, or as slides or negatives (see Cost of printing, below). Address all correspondence and contributions to the Society Correspondent. Length is immaterial, if the quality is good.

Editing. Authors should assume the basic responsibility for editing their material prior to submission. We will try to alter articles as little as possible, in an effort to maintain the original style of the author. At times, however, it may be necessary to translate particularly awkward or lengthy sentences into intelligible English. We may even have to delete some redundant material. If the required changes are excessive, or the intent of the article unclear, we will request revision.

Cost of printing. This is subject to change in the future, but presently contributors should pay the cost of printing from submitted slides or negatives. This amounts to \$7.00 for each color print from 35mm film (slides or negatives), and \$2.00 for each black and white print of 4" X 5" size or smaller to be included in an article. Thus an author should address a check for \$4.00 (2 X \$2.00) to David B. Richman if negatives for two black and white photographic figures are submitted. To expedite production, it is advantageous if prints rather than negatives are submitted. In this case, there is no charge. We will keep a complete record of individual contributions, and welcome any donations. It may be necessary to formally solicit a modest sum from members in the future.

Use of information. G. B. Edwards has noted that one may refer to information presented in PECKHAMIA as "correspondence." All material here is not copyrighted, and members should feel free to xerox and distribute this information as they wish. This is our intention. Naturally it is only honorable that one cite the author of an original contribution to PECKHAMIA appropriately whenever his/her ideas or results are incorporated into a formal publication. Nonetheless, the basic intention here is the free dissemination of information, thereby advancing the study of jumping spiders. The appearance of information in PECKHAMIA should not preclude its appearance elsewhere.

Frequency of distribution. Our intention is to put out numbers whenever we have assembled a reasonably minimal quantity of material. Thus our output will vary with the activity of members. Our ambition is to produce PECKHAMIA frequently. In any case, we hope to provide a continuous, if irregular, outlet of information for years to come.

Additional comments. Material is assigned to either the Articles and Reviews or the Membership sections of PECKHAMIA.

If you have not already submitted a resume of your past history or interests, please do so by all means. If you have a change of address, notify the Society Correspondent as soon as possible.

To further our acquaintance, we would like to include a plate of photographic portraits of current society members in a future number. We would appreciate it if you could submit a print of yourself which could be cropped to 1.67" X 2", for this purpose.

David Edwin Hill
General Editor

Rose Marie Hill
Editorial Secretary

ARTICLES AND REVIEWS:

GEORGE AND ELIZABETH PECKHAM. David B. Richman



Since the Peckham Society was named for George and Elizabeth Peckham, it seems fitting to present a short biography of these two arachnologists with a complete list of their publications on salticids. The following was gleaned from Muttkowski (1914) and Bonnet (1945): George Williams Peckham was born in Albany, New York on March 23, 1845. His family brought him to Milwaukee in 1853. He received parental consent to join the Union Army in 1863 and became a first lieutenant at the age of 19. After the Civil War he studied law and medicine, receiving both the M.D. and the LL.D. degrees. He decided, however, to pursue a career in teaching biology at East Division High School in Milwaukee. In 1880 George Peckham and Elizabeth Gifford were married. Elizabeth shared his interest in natural history and they published their first paper on the "Attidae" in 1883. George Peckham assumed the role of headmaster at the high school in 1888, and in 1891 he was appointed Superintendent of Public Instruction in Milwaukee. From 1897 until his retirement in 1910, Dr. Peckham served as director of the Milwaukee Public Library. Between 1883 and 1909, the Peckhams published a total of 25 works on the "Attidae," which are listed below. Apart from the rearing of their three children, there is little doubt that Elizabeth Peckham contributed greatly to the work on jumping spiders. George Peckham died from an attack of angina pectoris in 1914. The details of the life and death of Elizabeth are noticeably lacking in this account, and I would appreciate any information in this regard.

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 MUTTKOWSKI, R.A. 1914. George Williams Peckham, M.D., LL.D. 1845-1914.
 Entomol. News 25(4): 145-148.

PUBLICATIONS OF THE PECKHAMS:

PECKHAM, G.W. AND E.G. PECKHAM

1883. Descriptions of new or little known spiders of the family Attidae from various parts of the United States of North America. Milwaukee. 35p.
- 1885a. On some new genera and species of the Attidae. Proc.Natur.Hist. Soc.Wisconsin 1885: 23-42.
- ✓ 1885b. On some new genera and species of Attidae from the eastern part of Guatemala. Proc.Natur.Hist.Soc.Wisconsin 1885: 62-86. *and 23-42.*
- ✓ 1885c. Genera of the family Attidae: with a partial synonymy. Trans. Wisconsin Acad. Sci. 6: 255-342.
1887. Some observations on the mental powers of spiders. J.Morph. 1(2): 383-419.
- ✓ 1888a. Attidae of North America. Trans.Wisconsin Acad.Sci. 7: 1-104.
- ✓ 1888b. (with W.H. Wheeler) Spiders of the subfamily Lyssomaninae. Trans.Wisconsin Acad.Sci. 7: 222-256.
- ✓ 1889. Observations on sexual selection in spiders of the family Attidae. Occ.Pap.Natur.Hist.Soc.Wisconsin 1: 1-60.
1890. Additional observations on sexual selection in spiders of the family Attidae, with some remarks on Mr. Wallace's theory of sexual ornamentation. Occ.Pap.Natur.Hist.Soc.Wisconsin 1(3): 117-151.
- ✓ 1892. Ant-like spiders of the family Attidae. Occ.Pap.Natur.Hist. Soc.Wisconsin 2(1): 1-83.
- ✓ 1893. On the spiders of the family Attidae of the island of Saint Vincent. Proc.Zool.Soc.London 1893: 692-704.
- ✓ 1894. Spiders of the Marptusa group. Occ.Pap.Natur.Hist.Soc.Wisconsin 2(2): 85-156.
- 1895a. Spiders of the Homalattus group of the family Attidae. Occ.Pap. Natur.Hist.Soc.Wisconsin 2(3): 159-178.
- 1895b. New Trinidad spiders of the family Attidae. J.Trinidad Natur. Club 2: 212-216.
- 1895c. The sense of sight in spiders with some observations on the color sense. Trans.Wisconsin Acad.Sci. 10: 231-261.
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- 1901a. Pellenes, and some other genera of the family Attidae. Bull. Wisconsin Natur.Hist.Soc. (N.S.) 1: 195-233.
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- ✓ 1901c. On spiders of the family Attidae found in Jamaica. Proc.Zool. Soc.London 1901(2): 6-16.
- ✓ 1902. Some new genera and species of Attidae from South Africa. Psyche 9: 330-335.
- ✓ 1903. New species of the family Attidae from South Africa, with notes on the distribution of genera found in the Ethiopian Region. Trans.Wisconsin Acad.Sci. 14(1): 173-278.

- ✓1907. The Attidae of Borneo. Trans.Wisconsin Acad.Sci. 15: 603-653.
 ✓1909. Revision of the Attidae of North America. Trans.Wisconsin Acad. Sci. 16(1): 355-646.

PECKHAM, E.G.

- ✓1889. Protective resemblances in spiders. Occ.Pap.Natur.Hist.Soc. Wisconsin 1: 61-113.

PECKHAM, G.W.

1908. The generic name Rooseveltia. Bull.Wisconsin Natur.Hist.Soc. 6: 171.

THE MATING OF PHIDIPPUS PRINCEPS. D.E. Hill

Recently I attempted to mate a series of adult males and females of Phidippus princeps (Peckham 1883), one pair at a time, in an open arena on a desk top, much as Crane (1949) did with a number of salticids. The spiders (Figs. 1, 2) were originally collected as immatures in August, 1976 from a very dense population living atop Euphorbia esula herbs in an old field habitat which has since been destroyed by the advancement of "civilization" in the form of a paved parking lot. For historical interest, the locality was in Hennepin County, Minnesota. About 15 pairs were observed initially.



Fig. 1. (X 7) Adult male Phidippus princeps. Black with dull rust-red to orange scales on the dorsal opisthosoma and a group of white scales on the dorsal surface of the femur of each pedipalp.



Fig. 2. (X 7) Adult female P.princeps. Uniformly tan to light-brown with a white face and white scales extending onto the chelicerae; four hair pencils of the anterior prosoma are characteristic of the genus.

The first attempted mating was essentially a failure, as the females invariably stalked the fleeing males as prey. At first the males would circle the females in a series of steps as follows: The female would first orient toward the male as if in preparation for her attack. In response the male, with his forelegs outstretched laterally and elevated, would move away from her direct line of vision, orienting at an angle to her sagittal plane, thus apparently removed from the stalking range of her AME (Fig. 3).

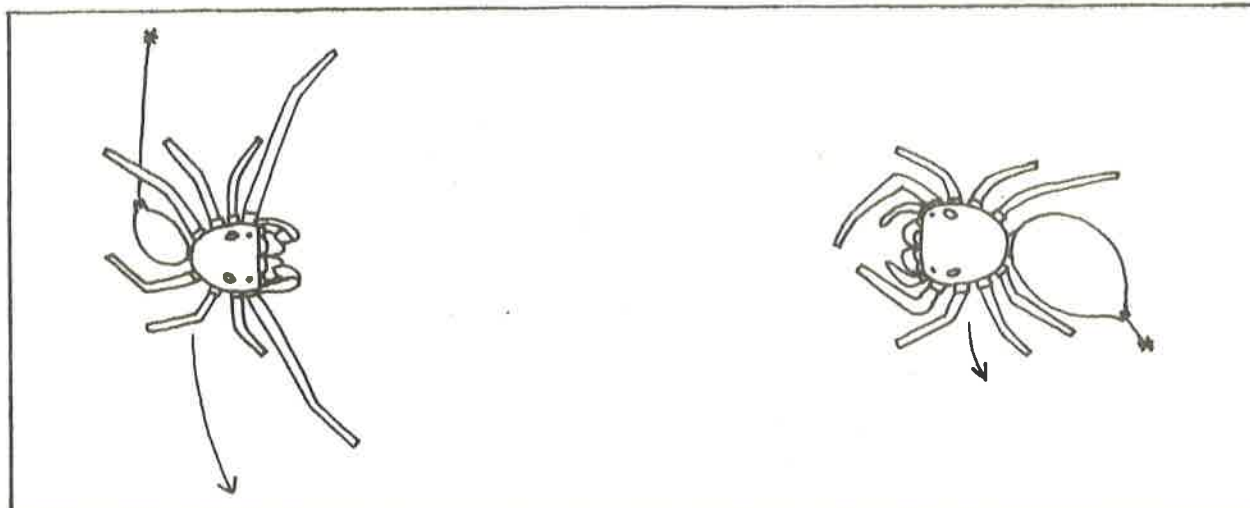


Fig. 3. Sequential (alternating) movements of the adult male (left) and adult female *P. princeps* during courtship in an open arena. Side-stepping by the male alternates with orienting turns of the female, in place.

This alternate turning continued until the male had completely described a circle about the female. The defensive aspect of this "courtship" stance of the male, with its elevation and spread of the forelegs, became immediately apparent whenever the female attacked the male directly, as the powerful forelegs and chelicerae of the male were generally sufficient to fend off this sort of frontal attack. Males only succumbed when they were not aware of the attack of a female from the rear.

On several occasions the female remained motionless as the male advanced although the male was forced to grapple somewhat with her forelegs before he could mount from the front. In this case the forelegs of the male, still elevated, were directed forward, toward the female, rather than laterally outstretched, as the male approached to grapple and touch the female.

Even when the female permitted the approach of the male, mating was, with a single exception, of very short duration- generally for less than one minute.

In contrast to the failure of this mating in an open arena, a series of 8 males placed directly into petri dishes containing resident females mated successfully, without exception. They entered the resting sacs of the females and mounted them immediately after introduction, or shortly thereafter (Fig. 4). Mating between individuals continued at intervals for at least 4 days, after which time several of the females did devour their captive mates.

It appears that several conclusions can be drawn from this, as well as from similar results with a smaller number of *P. audax*. First, defensive aspects of the "courtship" postures are paramount considerations, particularly in those salticid species which are prone to cannibalism.

Secondly, even if cohabitation of the sexes within a single resting sac is not a prerequisite for mating under natural conditions, it is nonetheless probably the most successful form of courtship for some jumping spiders.

The results of Jackson (1976) with *P. johnsoni*, as well as my own field observations of *P. clarus* (*P. rimator*) and *Eris marginata* suggest that salticid

cohabitation may be of wide occurrence in nature. Clearly a series of careful field studies on this subject will be required before any detailed appraisal of the extent of cohabitation in the Salticidae will be possible.

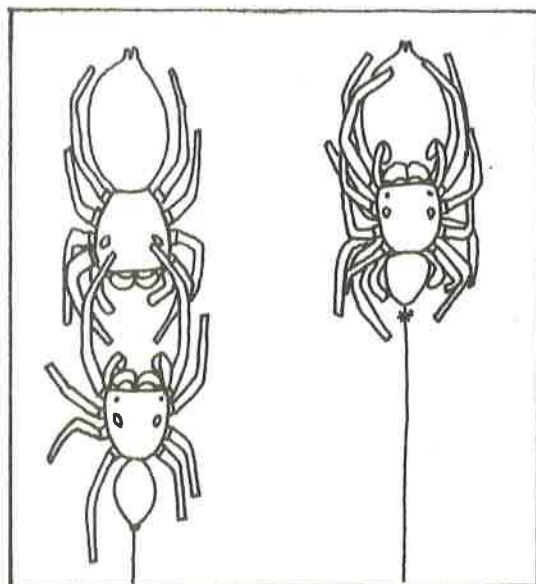


Fig. 4. Approach of male *P. princeps* to female in resting sac. In this case the male, already familiar with the female for at least one week (continuous residence in the same petri dish), exhibits the same tactile overture with legs I seen in males attempting to mate upon entrance to the sac of the female (left), but then assumes a stationary position within the sac, with all legs in contact with the body of the female (right). This position was maintained for at least two hours, if not longer. In this position, the body axes of the male and female are in complete alignment, and the limbs of the male are arranged in distinct bilateral symmetry.

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 JACKSON, R.R. 1976. The evolution of courtship and mating tactics in a jumping spider, *Phidippus johnsoni* (Araneae: Salticidae). Ph.D. Thesis, University of California, Berkeley. 271 p.

MODIFIED SETAE OF THE SALTICID PEDIPALP. D.E. Hill

In addition to the several size classes of ordinary and presumably mechanoreceptor setae (Foelix & Chu-Wang 1973a) which arise from the cuticle of the salticid pedipalp, three groups of specially modified setae are present (Fig. 1).

A distinctive group of broad white scales are present upon the dorsal surface of the femur of the pedipalp of the adult male *Phidippus audax*. The shafts of these modified setae emerge from the cuticle at an angle and subsequently bend in a distal direction to rest against the cuticle. The distribution of these highly reflective white scales is probably significant in the visual recognition of the male by the female of this species. The form and distribution of similarly modified setae upon the pedipalps of other salticids varies greatly.

Generally, an apical pit containing a large number of whorled setae, much like the whorled setae of the salticid pretarus described by Hill (1977, in press), is present, inserted into the distal tarsus of the pedipalp. The tips of these presumed contact chemoreceptors (Foelix 1970; Foelix & Chu-Wang, 1973b) extend to a uniform length, and thus it is possible that they could all sample the substrate at the same time. These are very

numerous in the adult male of *P.audax* (Fig. 1), but they apparently occur in lesser numbers in females and immatures. The presence of these setae correlates with the frequently observed tapping of the substrate with the pedipalps by salticid spiders. This behavior is especially evident in adult males which have just come into contact with female silk. Presumably in response to contact with a pheromone released by the female and associated with her silk, the behavior of *P.audax* changes dramatically from a walking pattern to a turning display with forelegs outstretched at a wide angle.

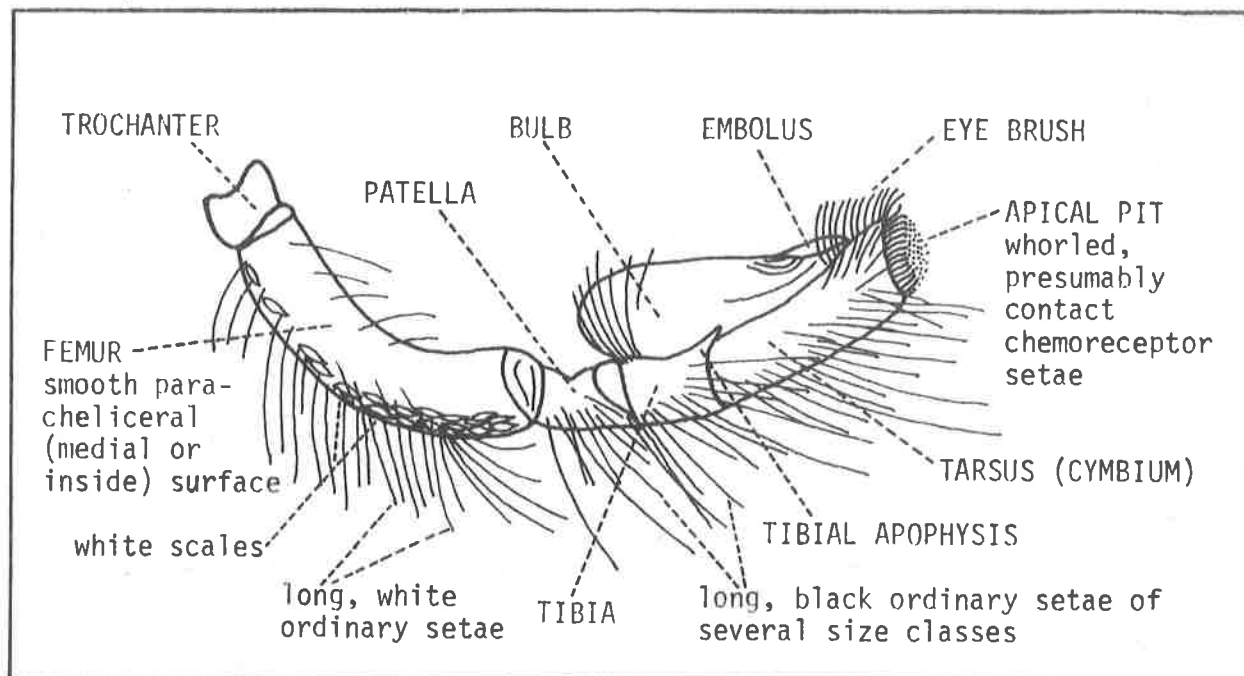


Fig. 1. Inside (medial) view of the right pedipalp of an adult male *Phidippus audax* from Johnson County, Iowa (X 20).

Finally, a group of specialized setae of the distal tarsus constitute an eye brush in all salticids examined (Fig. 1). These setae extend to a rather uniform length. SEM observation has shown that a series of decurrent, slightly recurved spines project from the ventral margin of the shaft of each seta just where it comes into contact with the AME as the pedipalp is brought down (dorso-ventrally) in a deliberate grooming motion against the surface of the eye. The action of this eye brush has been observed quite clearly in a living adult female *P.princeps* under a dissecting microscope, and there is no reason why this specialized function should not be applicable to the Salticidae in general.

REFERENCES:

- FOELIX, R.F. 1970. Chemosensitive hairs in spiders. *J.Morph.* 132: 313-334.
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HILL, D.E. 1977 (in press for April). The pretarsus of salticid spiders. Zool.J.Linn.Soc.London 60.

PORES IN THE INTEGUMENT OF SALTICID SPIDERS. D.E. Hill

During the course of a recent SEM study of salticid scales, I noticed the presence of perfectly round pores of ca. 500 nm. diameter, at the center of distinctive elevated cuticular disks of ca. 10 μ m. in diameter (Figs. 1, 2).

The pores are distributed over the surface of the opisthosoma, pedipalps, and legs of Phidippus, Metaphidippus, and Icius. They are present on both immature and adult spiders.

The form of these structures suggests either a secretory or a sensory function. An EM study of material embedded in plastic should provide some answers, if anyone is interested.



Fig. 1. (X 1380). Pore near the base of a large seta on the dorsal opisthosoma of an alcohol preserved specimen of Phidippus clarus (P.rimator). Portions of long, three-shafted red setae also lie above the folded (pleated) cuticle in this view.



Fig. 2. (X 1240). Dorsum of opisthosoma of a third instar P.clarus, showing the spacing of several of these distinctive pores. Scales (modified setae) and ordinary setae of two size classes are also present. The pleated opisthosomal cuticle allows for distention as the prey is imbibed. A smooth area of muscular insertion (left, center) interrupts the regular pleating.

REVIEW. David B. Richman

PROSZYNSKI, J. 1976. Studium systematyczno-zoogeograficzne nad rodzina Salticidae (Aranei) Regionow Palearktycznego i Nearktycznego (A systematic-

zoogeographic study of the family Salticidae-Araneae- of the Palearctic and Nearctic Regions). Wyzsza Szkola Pedagogiczna w Siedlcach Rozprawy Nr 6, 260 p., 450 figs., 219 maps.

Salticid students have tried for years to develop a natural classification for the jumping spiders. The ca. 70 "groups" proposed by Simon (1901, 1903) and the 21 subfamilies proposed by Petrunkevitch (1928, 1937) have long ago proven to be highly artificial and thus of doubtful use. These groupings were to a large extent based on distances between eyes, the number of cheliceral teeth, carapace shape and other characters which often may be influenced by adaptation and convergence. Chickering (1946) took the other extreme view and proposed only two subfamilies, the Lyssomaninae and the Salticinae based on the arrangement of the eye rows. Many other authors have considered the lyssomanids to comprise a separate family. Now Proszynski has examined the placement of the subfamilies in light of a comparison of genitalia, characters which should prove to be relatively stable under conditions of long-term environmental change. He presents a partial sketch of a new system, correcting some of the problems with Petrunkevitch's old subfamilies. He also presents some analysis of the zoogeography of Nearctic and Palearctic salticids for the first time. This is one of the most important works on salticid systematics and zoogeography to be published in recent years. It is most unfortunate that the text is in Polish which I do not read. The English summary is not adequate. The illustrations, while very helpful, would have been more so if the captions had been printed with them instead of separately.

A few criticisms can be made in regard to some of the placements of genera and also of some of the distributional data. The genus Metacyrba is very closely related to Menemerus and should be placed with the latter genus, possibly in the Aelurillinae. Paramaevia is closely related to Maevia (P. michelsoni is nearly intermediate between the two) and possibly should be associated with the latter genus in the Pelleninae. It will be noted that Barnes' (1958) Marpissinae has been dismembered by Proszynski, with some justification. A recent study of the opisthosomal scales by D.E. Hill indicates that many of the genera in the "Marpissinae" are probably unrelated. The distribution maps for several North American species are inaccurate. Map 9, showing the distribution of Menemerus bivittatus, does not indicate its extensive range in Mexico. Map 17, showing the distribution of Phlegra fasciata, does not include the range of this species in Florida, where it is very abundant in turkey oak leaf litter. Map 156, showing the distribution of Plexippus paykulli, ignores its extensive range into Florida and Mexico. Map 165, showing the distribution of Salticus scenicus, indicates that it occurs throughout the Nearctic, except for the far north, when in fact it appears to be absent from peninsular Florida and much of the southwestern United States and Mexico. In these areas it seems to be replaced either by Menemerus bivittatus and/or Plexippus paykulli or other species of Salticus.

Some of the nomenclature used by Proszynski is outdated. Phidippus variegatus and P. audax (Figs. 19, 22) are synonyms and P. miniatus (Fig. 23) is a junior synonym of P. regius. Metaphidippus imperialis (Fig. 13) is pre-occupied and the species takes on the next available name, M. Manni. Proszynski is not clear about his use of Dendryphantes and Metaphidippus and I find it difficult to distinguish between the two. I am also not sure whether he intends to synonymize Tutelina and the North American Icius with Dendryphantes,

or Zygoballus with Eris. I also wish that he had published descriptions along with his drawings (Figs. 311-450) of new taxa.

Most of these criticisms are minor. Much of the difficulty with distribution data was probably unavoidable, given the published material. Whether Proszynski's arrangements of the subfamilies will be accepted remains to be seen, but many of his arguments seem valid. The evidence for the close relationship of Habrocestum, Corythalia and Euophrys, as an example, is convincing. He has, at least, tackled a very difficult problem with the use of a possibly more effective tool than had previously been utilized. His data on the points of origin, migration and radiation of salticids are valuable contributions. I recommend this publication as a first major step toward a more reasonable classification of the salticids and as the only review of Holarctic salticid zoogeography in existence.

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 PETRUNKEVITCH, A. 1928. *Systema Araneorum*. *Trans.Conn.Acad.Sci.* 29: 1-270.
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 SIMON, E. 1901, 1903. *Histoire naturelle des Araignees. Tome 2, fascicule 3-4.* Paris. 381-1080.

INTERFERENCE COMPETITION BETWEEN SALTICIDS AND WEB SPIDERS. G. B. Edwards

Both Phidippus audax and P.clarus attack Argiope species (Araneidae), and sometimes they are victims of the latter (Wayne Tolbert, pers.comm.). A few similar records can be found in the literature. With regard to Enders' (1975) hypothesis that small araneids compete with large salticids for prey, these competing spiders should try to eliminate each other. A salticid could visually recognize an orb-weaver; salticids of the genus Linus may specialize on orb-weavers as prey.

Large theridiids (about the same size as small araneids) also prey upon jumping spiders. While living in Pennsylvania, I frequently observed that individual Metacyrba undata had been captured by Achaearanea tepidariorum, as well as by (possibly) Steatoda triangulosa. An occasional P.audax also fell victim to one of these theridiids. I probably missed many occasions when the tables were turned. In Florida, I observed a subadult P.otiosus stalking a female A.tepidariorum, but it was not able to penetrate the web of the latter. Once I saw a male Corythalia aurata attack an immature A.tepidariorum about one-fourth of his size. The salticid missed and became entangled in the web. In turn he was attacked by the theridiid which began to throw silk upon his legs. The C.aurata struggled vigorously, causing the theridiid to retreat temporarily toward the edge of the web. This sequence was repeated several times over a period of 4 minutes. During each reprieve the C.aurata would bite through the restraining threads, until it finally bit through all of them and dropped safely to the ground. If the theridiid had been larger, I am certain that it would have captured the salticid.

REFERENCE:

ENDERS, FRANK 1975. The influence of hunting manner on prey size, particularly in spiders with long attack distances (Araneidae, Linyphiidae, and Salticidae). *Amer. Naturalist* 109: 737-763.

PHOTO. J. Reiskind



Penultimate male Psecas enoplus Chamberlin and Ivie, 1936 (ca. 4 mm). This specimen was collected in the understory of the rainforest on Barro Colorado Island, Canal Zone, Panama. It is likely that this species is restricted to the canopy since it has been found after a tree fall and is quite uncommon in the understory. This species was chosen to illustrate the first issue of PECKHAMIA because its color pattern is reminiscent of this past American bicentennial celebration.

MEMBERSHIP SECTION:

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I grew up in suburban Los Angeles, in my early teens published some poetry and short fiction. Graduated high school in 1968, and continued writing and running track and cross country in junior college. Volunteered 4 years teaching English to Chinese immigrants, and graduated from UCLA with minors in English and Kinesiology, and a major in History, primarily oriental (my thesis was on Chinese immigration into Europe). I bummed through Europe and the Mid-East for three months, came home, married, turned from studying the languages and cultures of the orient to those of my new Mexican and Italian

inlaws, got a teaching credential, taught elementary school one year, and became a father. Since my wife, Vicki, wasn't eager to give up her teaching, I gave up mine, and for 18 months now have been home with my son, my spiders, and my second novel. I got into salticids by accident. While sweeping bushes with a net to catch live food for a toad, I caught a Thiodina. I was so intrigued that I could not offer her to the frog, and have been hooked ever since. My primary focus is on finding compatible groups of spiders that could do for terraria what the Guppy did for aquaria.

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Interested in all aspects of salticid biology, from biochemistry through ecology. Current research interests: 1) Ant predation by Habrocestum pulex, 2) Habitat partitioning in Metaphidippus, 3) Salticids of Minnesota, 4) Spider predation in forest ecosystems. Am sitting on a thesis revising western hemisphere Synageles, and Peckhamia. Possible far distant interests: 1) Electrophoretic studies on venoms among closely related species, 2) Revision of Neonella, 3) Systematic studies in the "micro" salticids, 4) Assessment of predation on outbreak species. Would be interested in identifying specimens of antlike salticids from the western hemisphere and the palearctic.

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At present I am working on ecology, biology and behavior of eastern Phidippus. My other interests in salticids- taxonomy, zoogeography, interspecific competition, intergeneric competition, competition with members of other cursorial families. I am involved in spiders in soybeans and hope to revise the genus Ballus in the near future.

PUBLICATION:

(with J.F. Carroll & W.H. Whitcomb). 1974. Stoidis aurata (Araneae: Salticidae). A spider predator of ants. Fla. Entomol. 57(4): 337-346.

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I was born on December 31, 1948 in Elmhurst (Cook Co.), Illinois, but grew up on Lake Minnetonka in Deephaven (Hennepin Co.), Minnesota. After some traveling and military service, I graduated with a B.S. in Zoology from the College of Biological Sciences of the University of Minnesota in Minneapolis and St. Paul, in 1973. In 1975 I completed an M.S. at Oregon State University in Corvallis, with a thesis entitled "The structure of the central nervous system of jumping spiders of the genus Phidippus." After a fellowship year at the University of Iowa (Iowa City), during which I had the opportunity to do a good amount of scanning electron microscopy on salticids, I accepted a fellowship to pursue my Ph.D. at the University of Florida with Jon Reiskind. I have one paper, entitled "The pretarsus of salticid spiders,"

in press, and hope to complete production on another paper dealing with salticid scales shortly. I am interested in all aspects of spider biology, but my focus remains upon the detailed analysis of the behavior of salticid spiders. My Ph.D. research involves the spatial orientation of Phidippus jumping spiders during the pursuit of prey. I am thoroughly convinced that conscientious field studies (ethology) should become a more important tool in future studies of salticid behavior.

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In a number of salticids, it has been reported that adult males may be found in cohabitation with either subadult or adult females. In these instances, the male and female occupy a joint nest (or retreat), which may consist of separate compartments. This was one of the phenomena that interested me in my research with Phidippus johnsoni. In my Ph.D. dissertation I reviewed the reports in the literature of this phenomenon in other salticid species. I am interested in finding out how widespread this phenomenon is in the Salticidae (and other spiders) and seeing what phylogenetic and ecological patterns there may be. From personal field experience, I know that there are salticid species in which cohabitation occurs that have not been reported in the literature. I would be interested in the observations of other people who work with salticids concerning the occurrence of cohabitation.

My general interest is animal behavior, population biology, and the synthesis that is occurring as the two fields come together. I also have a strong interest in the biology of arachnids, especially spiders, since this relatively ignored group is likely to provide much valuable information in the study of behavioral ecology and the evolution of behavior. One long term goal is to work on general models for reproductive patterns that will predict variables such as the types and complexity of courtship displays, male courtship and mating persistence, and sperm competition patterns as affected by such factors as population density, phenology, social structure, community structure, climatic seasonality, and habitat complexity. The salticids are well suited for studies of this type. The research animal that I used in my dissertation research was Phidippus johnsoni. Although my present research does not involve salticids, I have a continuing interest in all aspects of the biology of this group. Concerning my background, I was an undergraduate at North Carolina State University in the Zoology Department and I did my graduate research at the University of California at Berkeley. At present, I am back in Raleigh, working with Dr. Peter Witt in the Research Section of the North Carolina Department of Mental Health. My present research is concerned with the evolution of social phenomena in dictynid spiders.

PUBLICATIONS:

1974. Rearing methods for spiders. *J. Arach.* 2: 52-56.
1976. The evolution of courtship and mating tactics in a jumping spider, Phidippus johnsoni (Araneae: Salticidae). Ph.D. Thesis, University

- of California, Berkeley.
- In press. Courtship versatility in the jumping spider, Phidippus johnsoni (Araneae: Salticidae). *Animal Behaviour*.
- In review. Predation as a selection factor in the mating strategy of the jumping spider Phidippus johnsoni (Salticidae: Araneae).
- In review. Prey of the jumping spider Phidippus johnsoni (Araneae: Salticidae).
- In review. An analysis of alternative mating patterns in a salticid spider Phidippus johnsoni, with a review of spider courtship.

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Study of ant-mimicry first brought me to the salticids, which, with the clubionid mimics, make up the bulk of spider myrmecomorphs. One mimetic salticid from Panama, Uluella formosa, lives in association with a bambusoid grass and is presently being studied. Other work on clubionids continues but mention of that is inappropriate in this salticidological newsletter.

PUBLICATIONS:

- In press. Orsima formica: A Bornean salticid mimicking an insect in reverse. *Bulletin British Arachnological Society*.
- In press. Ant-mimicry in Panamanian clubionid and salticid spiders (Araneae: Clubionidae, Salticidae). *Biotropica*.

RICHMAN, DAVID B.
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Interested primarily in the systematics, behavior, ecology and evolution of salticid spiders. Current research interests: 1) Epigamic displays of salticids and their uses in systematics, 2) The salticids of Florida, 3) Field studies on salticid behavior, 4) Revisions of several small genera- Salticus, Hentzia. Possible future interests: 1) Revision of Habrocestum, 2) Revision of Pellenes for North America. Am preparing, along with Bruce Cutler and Wayne Maddison, a list of the Salticidae of the Nearctic with a key to the genera.

For a number of years (15 to be exact) I have been trying to put together a synoptic collection of North American salticids. I now have ca. 150 species from North America, plus scattered species from Central America, South America, the West Indies, Australia, India, and one species each from Borneo, South Africa and Europe. I would like to obtain more North American material, especially from the Pacific Coast, and to acquire more Old World species for

comparison. I am willing to trade Florida species of arachnids or insects for such specimens. David Hill recently examined the scale types of various species within my collection, and sections of the collection are available for short-term loans to anyone engaged in serious systematic work.

PUBLICATIONS:

1965. Jumping spiders (Salticidae) from Yuma County, Arizona, with a description of a new species and distributional records. *Southwestern Naturalist* 10(2): 132-135.
- 1973a. A new species of Pellenes (Araneae, Salticidae) from Arizona. *J. Arizona Acad. Sci.* 8(2): 76-78.
- 1973b. Comparative studies on the mating behavior and morphology of some species of Pellenes (Araneae-Salticidae). M.S. Thesis, University of Arizona. 73p.
1976. (with Vincent Roth) A revised list of the jumping spiders of Yuma County, Arizona. *Southwestern Naturalist* 21(2): 199-202.
- 1977 (projected). Ph.D. Thesis at the University of Florida on epigamic display in salticids.

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General interest in spider systematics and biogeography, particularly the nearctic and neotropical regions. Doctoral research: Systematics, biogeography and biology of Thiodina and related genera.

